1.   THE MONTY HALL PROBLEM*

You are on a game show on television. On this game show, the idea is to win a car as a prize. The game show host shows you three doors. He says there is a car behind one of the doors and there are goats behind the other two doors. He asks you to pick a door. You pick a door but the door is not opened. Then the game show host opens one of the doors you didn't pick to show a goat. Then he says that you have one final chance to change your mind before the doors are opened and you get a car or a goat. So he asks if you want to change your mind and pick the other unopened door instead. What should you do?

*Reprinted without permission from the book **The Curious Incident of the Dog in the Night-time** by Mark Haddon

2.   AARDVARK

The letters in the word AARDVARK are printed on square pieces of cardboard (same size squares) with letter per card The eight letters are then placed in a hat and one letter card is randomly chosen from the hat.

a)   Complete the table:

Outcomes	A	R	D	V	K
Probability					

Consider the following events:

    V: the letter chosen is a vowel
    F: The letter chosen falls in the first half of the alphabet (A – M)

Determine the following probabilities:

b)   P(V)   c)   P(F)

d)   P(V or F)   e)   P(F^c)

f)   Determine if the events V and F are independent:

3.   AP FREE-RESPONSE QUESTION (1999)

Die A has four 9's and two 0's on its faces. Die B has four 3's and two 11's on its faces. When either of these dice is rolled, each face has an equal chance of landing on top. Two players are going to play a game. The first player selects a die and rolls it. The second player rolls the remaining die. The winner is the player whose die has the higher number on it.

Suppose you are the first player and you want to win the game. Which die would you select and why?